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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/558,121	04/25/2000	Christopher Peter LaRosa	CS10088 P01	9421

7590 11/15/2005  
Motorola Inc  
Personal Communications Sector  
Intellectual Property Department (PJB)  
600 North US Highway 45 Rm AN475  
Libertyville, IL 60048

EXAMINER
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ELALLAM, AHMED

ART UNIT	PAPER NUMBER
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2668

DATE MAILED: 11/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	Application No. 09/558,121	Applicant(s) LAROSA ET AL.	
	Examiner AHMED ELALLAM	Art Unit 2668	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 August 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2 and 5-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,2,5-12,15 and 32-34 is/are allowed.
- 6) ☒ Claim(s) 13,14,18-20,23 and 25-30 is/are rejected.
- 7) ☒ Claim(s) 16,17,21,22,24,28,29 and 31 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. This communication is responsive to Appeal brief filed on 8/22/2005. In view of new art, the prosecution is opened.

Claims 1-34 are pending, claims 1, 2, 5-12, 15, 32-34 are allowed. Claims 13, 14, 18-20, 23, 25-27, 30 are rejected. Claims 16, 17, 21, 22, 24, 28, 29 and 31 are objected to.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hutchinson, US (5,790,589) in view of Butler et al, US (6,243,561).

Regarding claim 13, with reference to figures 4, Hutchison discloses a method/system for acquiring a pilot signal comprising:

Receiving a spread spectrum signal at antenna 42, the received signal is despread and multiplied by a PN code generator 60, see column 6, lines 65-67 and column 6, lines 1-24. (Claimed received signal);

A searcher controller that provides a PN offset to the PN generator 60, see column 6, lines 25-24. (Reads on generating a pseudo-random noise (PN) sequence at each of a plurality of different PN offsets);

A plurality of accumulators 48, 50, responsive to signals from searcher controller 58 for resetting, latching and setting the summation period, in connection with squaring means 52 for squaring each of the sums and adds the squares together, the sum of the squares is provided by squaring means 52 to non-coherent combiner accumulator 54, the non-coherent accumulator 54 determines an energy value from the output of squaring means 52. Further, Hutchison discloses that accumulator 54 provides the energy signal to comparison means 56 which compares energy value to predetermined thresholds supplied by searcher controller 58, and the results of each of the comparisons is then fed back to searcher controller 58. Search controller 58 examines the comparisons and determines whether the window contains likely candidates for the correct offset, see column 6, lines 35-50. Hutchison also disclose that the iterative searching method is repeated with alternating advanced and retarded search windows until either the actual location of the pilot channel in the PN code sequence is detected or a predetermined number of iterations has occurred, see column 3, lines 54-63. (Claimed interrupting the correlation when correlation energy at least equal to a predetermined threshold is produced; and choosing a PN sequence timing based upon the PN sequence and a PN offset that produce a full correlation energy at least equal to the predetermined threshold).

The difference between the invention of claim 13 and the teaching of Hutchinson is that Hutchinson correlates samples as they arrive without explicitly disclosing storing samples of the received signal to be correlated.

However, Butler in the same field of pilot acquisition techniques, Butler discloses pilot searching on samples (PN samples) at various time offsets that produces maxima above a predetermined threshold. See column 3, lines 13-20 and column 4, lines 7-17. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to store the received signal of Hutchinson in accordance with the teaching of Butler so to reduce power consumption in acquiring the PN signal of Hutchinson (see Butler, column 5, line 9-18).

Regarding claim 14, Examiner interpreted the feature of repeating with alternating advanced and retarded search windows until either the actual location of the pilot channel in the PN code sequence is detected or a predetermined number of iterations has occurred (see column 3, lines 54-63) as being the claimed the step of choosing a PN sequence timing in response to step of interrupting the correlation.

3. Claims 18-20, 23, 25-27, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Butler et al, US (6,243,561) in view of Hulbert, US (6,069,915).

Regarding claim 18, with reference to figure 2, Butler discloses an apparatus (fig.2) for acquiring a pseudo-random (PN) sequence timing for code division multiple access (CDMA) radiotelephone, the apparatus comprising:

a sample Ram 204 for storing a plurality of samples of a received signal, (claimed buffer);

a searcher unit 206, coupled to the sample RAM and operable to perform pilot searching on the stored samples at various time offsets that produces maxima above a predetermined threshold, see column 4, lines 7-17. (Claimed correlator coupled to the buffer and operable to correlate at least a portion of the same stored samples with PN sequence at each of a plurality of different PN offsets to produce corresponding energies).

Control system 210, coupled to the searcher and wherein the resulting set of correlation energies and associated offsets (search results) are reported to the control system, see column 6, lines 40-42. Butler also discloses that the searcher comprises an N-max tracker that collects the set of N largest correlation energies for different search regions, see column 6, lines 36-39.

Butler does not specify interrupting the searcher (claimed correlator) from correlating portions of the samples with further PN sequences with different PN offset, when a PN sequence at a particular PN offset produces a correlation energy at least equal to an energy threshold.

However, Hulbert discloses correlating received signal samples with a local PN generation and that completing the correlation once a predetermined threshold is found, see column 2, lines 6167 and column 3, lines 3. (Claimed interrupt the correlator from correlating portions of the samples with further PN sequences of different PN offset,

when the PN sequence at a particular PN offset produces a correlation energy at least equal to an energy threshold).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Hulbert with that of Butler so that the searcher (correlator) of Butler can be interrupted upon a determined energy threshold so that pilot acquisition can be determined based on a single energy maxima calculation. The advantage would be the reduction in power consumption in acquiring the PN signal of Butler using the stored samples of the received PN signal. (See Butler, column 5, line 9-18).

Regarding claim 25, claim 25 has the same scope of claim 18, with the addition of a base station. Butler with reference to figure 1 shows a base station 12 in communication with a cellular telephone 10 (claimed apparatus of claim 18).

Regarding claim 19 and 26, Butler discloses that the control unit is a microprocessor, see column 3, lines 10-12.

Regarding claim 20 and 27, Butler discloses that the resulting set of correlation energies and associated offsets (search results) are reported to the control system, see column 6, lines 40-42. Thus a memory for storing the set of correlation energies and associated offsets is inherent to Butler, because that is needed for receiving the set of correlation energies and associated offsets by the control system.

Regarding claims 23 and 30, Butler with reference to figure 4 shows the searcher comprising PN generator 404 connected to the sample RAM, and PN Walsh generator

410 and 408. (Claimed PN sequence generator coupled to the buffer and the correlator to generate the PN sequence at each of the plurality of different PN offsets).

***Allowable Subject Matter***

4. Claims 1, 2, 5-12,15, 32-34 are allowed.

Claims 16,17, 21, 22, 24, 28, 29 and 31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to AHMED ELALLAM whose telephone number is (571) 272-3097. The examiner can normally be reached on 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on (571) 272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.



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Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AHMED ELALLAM  
Examiner  
Art Unit 2668  
11/11/2005

  
CHIEH M. FAN  
PRIMARY EXAMINER